

### Program Description/Textbook or Print Instructional Material

Vendor:	Glencoe/McGraw-Hill	Web Address:	http://www.glencoe.com
Title:	MECHANICAL DRAWING: BOARD AND CAD TECHNIQUES		
Author:	French, Helsel	Copyright:	2003
ISBN:	0078251001	Course/Content Area:	DRAFTING
Intended Grade or Level:	9-12	Readability Level:	9 Fry
List Price:	N/A	Lowest Wholesale Price:	44.97

Level of Accommodations (Level One, Two or Three)

If Level Two or Three, please provide rationale for not meeting Level One Compliance: The cost of compliance at any level is too high given the low enrollment in this curriculum area.

#### FEATURES\*

**\*DISCLAIMER:** The features of each book or program were developed by the publisher and do not reflect the opinion of the State Textbook/Instructional Materials Review Team, State Textbook Commission, or the Kentucky Department of Education.

#### Content

*Mechanical Drawing: Board & CAD Techniques* is a high school drafting program with Chapters divided into 3 Parts: Drafting Principles, Board Drafting Techniques, and CAD Techniques. The program is written to ANSI and ISO Standards. The structure enables students to learn drafting principles *before* practicing either board or CAD techniques to create technical drawings. This text helps make the transition from board drawing to CAD, the drawing form most often used in industry today. Students learn basic drafting techniques, dimensioning, sectional views, fasteners, pattern development, drafting for welding and pipe, cams and gears, structural drafting, electricity/electronics drafting, media management and desktop publishing for drafters.

#### Student Experiences

Students using *Mechanical Drawing: Board & CAD Techniques* will be actively engaged in drawing their own technical drawings, whether it be board, CAD or both. Students have multitudes of opportunity to practice their drawing in each chapter where several methods may be provided, and with all the problems at the ends of each Chapter.

#### Assessment

Students using *Mechanical Drawing: Board & CAD Techniques* have multitudes of opportunity to assess their own work by all the drawings they do in each chapter and by the Chapter Review. The instructor may also use these problems as a source of evaluation, but the instructor also has a formal test and *more* problems in the Instructor Resource Guide with which to evaluate student's work. A computer test generated test, **ExamView®**, is also available on the Instructor Productivity CD-ROM. The instructor may create customized tests when using **ExamView®**.

#### Organization

The 24 Chapters of *Mechanical Drawing: Board & CAD Techniques* are each divided into 3 parts: Drafting Principles, Board Drafting Techniques, and CAD Techniques. This format allows instructors who want to teach only the Drafting Principles and Board Drafting Techniques to do so. It also allows those instructors who want their students to have more practice using CAD to do so. This format lends much flexibility for instructor planning. Each Chapter includes text features Success on the Job, CADTIP, and TECH MATH. Each Chapter opens with Key Terms and bulleted Objectives. Illustrations including line drawings and photos verify reading content. End-of-Chapter Review offers a Chapter Summary and Review Questions. Each end-of-Chapter also offers *pages* of problems for students to practice their drafting skills. Two Appendix of abbreviations and symbols, Reference Tables, Glossary and Index complete this text.

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### Resource Materials

- **Gratis Items To Be Provided And Under What Conditions**

Free, 1 Per Teacher: Instructor Resource Guide, Instructor Productivity CD-ROM, Student Workbook IAE

- **Available Ancillary Materials**

All Items Listed Above as Gratis Items

### **RESEARCH DATA/EVIDENCE OF EFFECTIVENESS\*\***

**\*\*DISCLAIMER:** The Research Data/Evidence of Effectiveness was provided by the publisher and do not reflect the opinion of the State Textbook/Instructional Materials Review Team, State Textbook Commission, or the Kentucky Department of Education.

#### Research Data

*Mechanical Drawing: Board & CAD Techniques* is the result of extensive survey among drafting instructors in high schools all over the country. Many instructors indicate the growing need to teach CAD drafting in the classroom. In preparation for this major revision, the following strategies were used:

- Thorough review of competitive texts
- Extensive survey with classroom teachers as to their needs
- Extensive, time-consuming fact checking to validate technical accuracy
- Review of manuscript from the outline stage through completion by classroom instructors
- Correlation to ANSI and ISO Standards



# Group V - Career/Technical Vocational/Practical Living Education Instructional Materials Evaluation Tool Technology Education



<b>Title: Mechanical Drawing Board &amp; CAD Techniques</b>			
<b>Publisher: Glencoe McGraw-Hill</b>			
<b>Item Evaluated: Text, Student Workbook, Instructor Resource Guide</b>			
<b>Copyright Date: 2003</b>		<b>Evaluator: Kay Turner</b>	
<b>Content Level: 9-12</b>		<b>Date of Evaluation 7/30/03</b>	
<b>Level of Alternative Format</b>	<b>Level 1 – Full Compliance</b>	<b>Level 2 – Provisional Compliance</b>	<b>Level 3 – Marginal Compliance</b>
This section completed by Exceptional Children Services			

## Overall Strengths and/or Weaknesses

**Disclaimer:** Comments on the strengths and/or weaknesses of each book, material or program were written by members of the State Textbook/Instructional Materials Review Team and reflect their opinions . They do not reflect the opinions of the State Textbook Commission nor the Kentucky Department of Education. In addition, the State Textbook/ Instructional Materials Review Team completed each evaluation form during the week of July 28-Aug. 1, 2003. In order to maintain the integrity of the of the review team's comments, editing was limited to spelling and punctuation.

<b>Recommendations:</b>
<input checked="" type="checkbox"/> Recommended by reviewers to State Textbook Commission
<input type="checkbox"/> Not recommended by reviewers to State Textbook Commission

**Publisher's Explanation of Reviewer's Comments:** By action of the State Textbook Commission, publishers are provided limited space, 150 words, to respond to what they may consider factual errors made by the reviewers in the evaluation.



**Group V - Career/Technical  
Vocational/Practical Living Education  
Instructional Materials Evaluation Tool  
Technology Education**



<b>Title: Mechanical Drawing Board &amp; CAD Techniques</b>		<b>Publisher Glencoe McGraw-Hill</b>
Technology Management Summary Data:	20 possible points	_____4_____ points earned
Technology Management Comments:		
Technology Presentation/Interface Summary Data:	40 possible points	_____23_____ points earned
Technology Presentation/Interface Comments:		
Content Summary Data:	20 possible points	___20_____ points earned
Content Comments:		
Instruction & Management Summary Data	52 possible points	_____51_____ points earned
Instruction & Management Comments:		
Organization & Structure Summary Data	36 possible points	___32_____ points earned
Organization & Structure Comments:		
Resource Material Summary Data	40 possible points	___24_____ points earned
Resource Material Comments:		



# Group V - Career /Technical & Vocational/Practical Living

## Electronic Instructional Media Review Form

### Stand Alone/Independent or Integrated Software for Technology Education



Equipment (circle or change fill color)	Grade Level (circle or change fill color)	Audience (circle or change fill color)	Format (circle or change fill color)	Cost _____	
Windows	Primary	Individual	Stand Alone/Independent	____x____single copy	____site license
Macintosh	Intermediate	Small Group	Integrated	____network version	____school version
CD-ROM	Middle	Large Group	Supplemental	____lab pack of ____ copies	____online
DVD	High		In lieu of basal test		
Sound					
Other					

  

Type of Software: Check all that apply	____x____Simulation	____x____Management	____Interdisciplinary	____x____Problem Solving	____Tutorial
____x____Exploratory	____Creativity	____x____Drill and Practice	____x____Critical Thinking	____Utility	____Other:

Rating Scale:	3—Some of the time	1—None of the time
4—All or the time	2—Minimally	0— Not applicable

Management	Rating
Allows customizing for individual learning needs.	4
Allows students to exit and resume at a later time.	0
Keeps a students performance record, where needed.	0
Allows control of various aspects of the software (e.g., turning sound off).	0
Allows for printed reports.	0
Comments:	<b>Total 4</b>

Presentation/Interface	Rating
Presents material in an organized manner.	4
Has consistent, easy-to-use, on-screen instructions.	3
Has developmentally correct presentation format.	3
Adapts to different learning environments (learning styles/multiple intelligences, etc.)	3
Accessible for special needs students.	2
Runs smoothly, without long delays.	3
Presents easy-to-view text and graphics.	3
Presents easy-to-hear and understand sounds.	0
Avoids unnecessary screens, sounds, and graphics.	0
Provides immediate, appropriate feedback.	2
Comments:	<b>Total 23</b>

Content—Technology Education	Rating
Nature of Technology	4
Technology and Society	4
Design	4
Abilities for a Technological World	4
The Design World	4
Comments:	<b>Total</b> <b>20</b>

Rating Scale:	2—Minimally
4—All or the time	1—None of the time
3—Some of the time	0— Not applicable

Instruction and Assessment	Rating
Identifies a Sense of Purpose	4
Builds on Student Ideals	4
Engages Students	4
Develops Technology Ideas	4
Promotes Student Thinking	4
Assesses Student Progress	4
Enhances The Learning Environment	4
Reading level is appropriate for interest and ability level of intended student group; level remains consistent throughout.	4
Commonwealth Accountability Testing System (CATS) "like" Assessment is provided	4
Variety of Assessments (diagnostic, formative, summative, open response, multiple choice, individual, small group, oral, demonstrations, presentations, self and peer performance, portfolio prompts) is included.	3
Includes activities and opportunities for integration of technology.	4
Reflects researched-based practices (e.g. hands-on activities, technology, problem-solving situations)	4
Differentiation techniques and activities suggested.	4
Comments:	<b>Total</b> <b>51</b>

Rating Scale:	3 – Some potential for learning	1 - Not present
4 – High potential for learning	2 – Little potential for learning	0 – Not applicable

Organization and Structure	Rating
Organization is logical and allows for spiraling of content.	4
Vocabulary and key terms are clearly defined and easily accessible within each lesson.	3
Visual illustrations (e.g. graphs, charts, models) and examples are clearly presented and content-related.	4
Illustrations and language reflect diversity (e.g. racial, ethnic, cultural, age, gender, disabilities).	2
Legible type, length of lines, spacing, and page layout and width of margins contribute to overall appearance and use.	3
Student materials seem durable and conducive to daily use.	4
Includes sufficient glossary, index and appendices.	4
Employs accurate grammar and spelling	4
Organization of material can be effectively used with Standards Based Units, Core Content and Program of Studies.	4
Comments:	<b>Total</b> <b>32</b>

Resource Materials	Rating
Teacher materials coordinate easily with student materials (e.g. additional resources included at point of need, student pages shown, integration of technology indicated)	3
Activities are included that adapt to the various learning styles, intelligences, and interest/ability levels.	4
Extension activities including adaptations and accommodations for students with special needs.	4
Resources provide objectives, background information, common student errors, hints, advice for lesson implementation and real-world connections, connections with career and/technology and references (e.g. solution manuals, study guides)	4
Suggestions are made for integration of themes and /or interdisciplinary instruction.	4
Integration opportunities suggested and examples given.	4
Teacher resources are available online.	1
Online resources available – Repeat of information in text.	0
Online resources available – Practice skills only.	0
Online resources available – New application materials.	0
Comments:	<b>Total</b> <b>24</b>

Rating Scale:	
4—All or the time	2—Minimally
3—Some of the time	1—None of the time
	0— Not applicable